

HETERODYNE FREQUENCY MODULATED SIGNAL DEMOMULATOR AND METHOD OF OPERATING THE SAME

ABSTRACT OF THE DISCLOSURE

5 A heterodyne interferometer, adaptive optics system, method of measuring
movement of a target and/or variations in a beam propagation medium, and method of
controlling an adaptive optics system are provided. The heterodyne interferometer
includes an acoustic-optical modulator that can superimpose a RF signal on a source
signal, and output a zero order beam and a higher order beam. One of the beams
10 comprises a target beam and the other beam comprises a local oscillator beam. A
telescope can receive the target beam, and direct the target beam through the beam
propagation medium to the target. A beam splitter can receive the local oscillator
beam and the reflected beam from the target, and coherently combine the local
oscillator beam and the reflected beam to produce a fringe pattern. A detector can
15 receive the fringe pattern and generate an electrical beat signal, which can be
demodulated based upon the RF signal.